PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Bruce et al.	Examiner:	Turner, S.
Serial No.:	09/386,112	Group Art Unit:	2877
Filed:	August 30, 1999	Docket No.:	AMDA.261PA
Title:	DUAL-DIFFERENTIAL INTERFEROMETRY FOR SILICON DEVICE DAMAGE DETECTION		

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this communication is being deposited, in triplicate, in the United States Postal Service, as first class mail, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on February 19, 2003.

By: Kelly Wattigney
Kelly Wattigney

APPEAL BRIEF

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This is an Appeal Brief submitted pursuant to 37 CFR section 1.192 for the above-referenced patent application, in which claims 1-16 stand rejected. Please charge Deposit Account number 01-0365 (TT2335) in the amount of $320 for this Brief in support of Appeal in accordance with 37 C.F.R. §1.17(c) for a large entity.

I. Real Party in Interest

The real party in interest is Advanced Micro Devices, Inc., having a place of business at One AMD Place, Sunnyvale, CA. The above referenced patent application is assigned to Advanced Micro Devices, Inc.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-16 stand rejected under 35 U.S.C.§112, first paragraph; claims 1-16 stand rejected under 35 U.S.C.§112, second paragraph; and claims 1, 2, 7 and 9-15 stand rejected under 35 U.S.C.§103(a) as being unpatentable over *Marx et al.* (U.S. Patent No. 5,880,838).

IV. Status of Amendments

An Office Action Response including an amendment was filed on December 22, 2000 in response to a first Office Action on the merits mailed on September 22, 2000. A Final Office Action on the merits was mailed on January 30, 2001. A response to the Final Office Action was filed on March 30, 2001. An Advisory Action dated April 13, 2001 indicated that claims 1-16 stand rejected for purposes of Appeal, and a Notice of Appeal was filed on April 20, 2001. An Appeal Brief was filed on July 20, 2001 and, in response thereto, prosecution was re-opened and a new Office Action was mailed on December 5, 2001. An Office Action Response and Amendment was filed on March 5, 2002 with an amendment to claim 11 therein. A second Final Office Action was mailed on August 27, 2002, and a Final Office Action Response was filed on October 28, 2002. An Advisory Action mailed on November 25, 2002 indicated that claims 1-16 stand rejected for purposes of Appeal, and a Notice of Appeal was filed on December 19, 2002.

The claims in the current amended state are attached hereto as an appendix.

V. Summary of Invention

The present invention is directed to analyzing a semiconductor die and detecting one or more defects at a surface within the die. In one particular example embodiment of the present invention, a semiconductor device that includes a semiconductor die (202) is analyzed to detect a defect (232) at a surface (231) in the die. The surface and defect may include, for example, a defect in one material type (such as within a well region) where the reflecting surface is a transition from one concentration of doped silicon to another concentration of doped silicon (such as from a p+ epitaxial silicon to an active or well region). In addition, the defect may include one or more contaminants such as potassium deposits, fractures in the silicon, various crystal defects, particulates and dopants found at a surface within the die. Light is directed through a first beam splitter (220) that is adapted to direct a first beam of light into the back side of the semiconductor die (202) that reflects a second beam of light back. The second beam is

redirected to a second beam splitter (222) that generates third and fourth beams of light d_1 and d_2. The third and fourth beams are directed at detectors (228 and 230) and analyzed in one or more of a variety of manners to detect a defect within the die. For example, the time differential of the arrival of the third and fourth beams can be detected and then compared to a reference differential previously generated using a non-defective die.

VI. Issues for Review

ISSUE 1: Is the Section 103(a) rejection of claims 1, 2, 7 and 9-15 over the '838 reference proper when the cited reference fails to teach or suggest every element of the claimed invention?

ISSUE 2: Is the Section 103(a) rejection of claims 1, 2, 7 and 9-15 over the '838 reference proper when the Examiner failed to provide any evidence of motivation for modifying the '838 reference?

ISSUE 3: Is the Section 112, first paragraph rejection proper when the subject matter upon which the rejection is based is not claimed and, as such, is not subject to the disclosure requirements of Section 112?

ISSUE 4: Is the Section 112, first paragraph rejection proper when the Specification clearly describes example embodiments for the claimed elements of the present invention in a manner that would enable one skilled in the art to make and use the invention?

ISSUE 5: Is the Section 112, second paragraph rejection proper when the Examiner based the rejection upon an improper assertion and when the claimed limitations are definite as consistent with the requirements of Section 112(2)?

ISSUE 6: Is the Section 112, second paragraph rejection proper when the Examiner failed to fully and clearly state the rejection in a manner that allows the Appellant to judge the propriety thereof?

ISSUE 7: Is the finality of the Section 112, first paragraph rejection proper when the Examiner failed to answer the substance of the Appellant's traversal as required by M.P.E.P.§707.07(f)?

VII. Grouping of Claims

For purposes of this appeal, claims 1 and 9 are in group 1, claims 2 and 4-7 are in group 2, claims 3 and 8 are in group 3, claims 10-15 are in group 4 and claim 16 is in group 5. The claims as now presented do not stand or fall together.

VIII. Argument

Group 1 of the claims is separately patentable over the prior art and over the remaining claim groups of the present invention because it is directed to subject matter that includes a method of detecting defects in a semiconductor device that includes analyzing the device via a comparison of a relational factor of two beams of light from reflected light from the device. Group 2 of the claims is separately patentable over the prior art and over the other claim groups because it is directed to subject matter that includes using a reference die in the comparison for detecting a defect in the die being analyzed, which is not necessarily required in the other claim groups. Group 3 of the claims is separately patentable over the prior art and over the other claim groups because it is directed to subject matter that includes using a relational factor that is a function of a time differential between beams of light for analyzing the die, which is not necessarily required in the other claim groups. Group 4 of the claims is separately patentable over the prior art and over the other claim groups because it is directed to subject matter that includes a system adapted for detecting defects in a semiconductor device by analyzing the device via a comparison of a relational factor of two beams of reflected light from the device, which is not necessarily required in the other claim groups. Group 5 of the claims is separately patentable over the prior art and over the other claim groups because it is directed to subject matter that includes a system adapted to analyze a die via a relational factor that is a function of a time differential between beams of light, which is not necessarily required in the other claim groups.

ISSUE 1: The Section 103(a) rejection of claims 1, 2, 7 and 9-15 over the '838 reference is improper because the cited reference fails to teach or suggest every element of the claimed invention and, therefore, fails to establish a *prima facie* case of obviousness.

The Section 103(a) rejection in over the '838 reference is improper because the Examiner failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met, as indicated in the M.P.E.P. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art

reference (or references when combined) must teach or suggest all the claim limitations. In this instance, the Examiner failed to meet all of the criteria for establishing such a Section 103(a) rejection, as discussed below and in Issue 2, which follows.

Regarding the third criteria for establishing a *prima facie* case of obviousness, the Examiner failed to cite portions of the '838 reference or of any other reference that correspond to all of the claimed limitations. For example, as acknowledged by the Examiner on page 6 of the second Final Office Action, the '838 reference does not teach or suggest limitations including defect detection and/or thinning of a semiconductor die. In a hindsight attempt to arrive at the presently-claimed invention, the Examiner purports that using the '838 reference for defect detection would have been obvious, and that thinning the back side is well-known in the art and obvious to use in connection with the teachings of the '838 reference. However, no teaching or suggestion in support of these assertions was provided, either upon the initial rejection of the claims or after the lack in teaching was pointed out by the Appellant.

In addition to the missing limitations acknowledged by the Examiner, a variety of other claimed limitations were not discussed whatsoever in the Office Actions of record. For example, independent claims 1, 10, and 11 are directed to subject matter that includes "comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die." Claim 2 is directed to subject matter that includes using a nondefective semiconductor die to obtain the reference used in claim 1. The Examiner has not provided a reference that teaches or suggests these limitations.

In this regard, the Examiner failed to meet the third requirement for establishing a Section 103(a) rejection. Therefore, a *prima facie* case of obviousness has not been established, and the Section 103(a) rejection should be removed.

ISSUE 2: The Section 103(a) rejection of claims 1, 2, 7 and 9-15 over the '838 reference in improper because the Examiner failed to provide any evidence of motivation for modifying the '838 reference.

Appellant submits that the Section 103(a) rejection should be removed because the Examiner has not provided motivation for modifying the '838 reference. Instead, the Examiner has made broad conclusory statements regarding the use of the '838 reference for detecting defects without providing evidence of motivation of why one skilled in the art would have been

motivated to modify the '838 reference to arrive at the presently-claimed invention. Recent case law indicates that evidence of the reasons one of ordinary skill in the art would have been motivated to select the references and combine them should be specifically identified and shown by some objective teaching in the prior art leading to the modification. *See, e.g., In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). In this instance, the Examiner failed to cite such evidence and thus failed to satisfy the motivation requirement for maintaining the Section 103(a) rejection.

Specifically, the Examiner has not provided any evidence of teaching or suggestion for using the '838 reference in connection with defect detection in a semiconductor die, as claimed in the present invention. For instance, in the Response to Arguments section of the Final Office Action, the Examiner asserts that "the skilled artisan when detecting height defects would look to Marx to measure the surface profile." However, no evidence has been cited in support of this assertion, and it is further unclear as to how measuring a surface profile or detecting height defects would be relevant to the claimed limitations of the present invention. In addition, while the Examiner also asserts that thinning the die is "well known in the art," Appellant submits that no motivation for thinning in connection with the '838 reference has been provided. In regard to the various claimed limitations that the Examiner has ignored in making the Section 103(a) rejection (discussed above in connection with Issue 1), the Examiner did not provide any motivation for accordingly modifying the '838 reference. Appellant has briefly reviewed the '838 reference and cannot find teaching or suggestion for modifying the '838 reference to achieve the claimed limitations. The Examiner has therefore failed to establish a *prima facie* case of obviousness and the Section 103(a) rejection should be reversed.

ISSUE 3: The Section 112, first paragraph rejection is improper because the subject matter upon which the rejection is based is not claimed and not subject to the disclosure requirements of Section 112.

The Section 112, first paragraph rejection of claims 1-16 is based upon terms that include unclaimed subject matter and is thus based on the wrong test. Appellant submits that the rejection is improper because "the parameters of a section 112 inquiry are set by the claims" and such "[u]nclaimed subject matter is not subject to the disclosure requirements of §112." *See* Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1567 (Fed. Cir. 1996) (emphasis in original). In this

instance, the Examiner used the wrong test in making the rejection by relying upon an alleged failure to disclose elements that are not claimed, rather than basing the rejection upon the claims. Specifically, the Examiner indicated (in the second Final Office Action) that "[t]he Specification fails to describe how an interference profile is generated from the disclosed invention" and that "how the reflected and nonreflected beams are combined is not disclosed." However, no claim is made to the generation of an interference profile or the combination of reflected and nonreflected beams. Furthermore, no claim is made to a dual-differential detection approach and thus disclosure of such an approach is not required.

In view of the above, the limitations relied upon in the making the Section 112 rejection are not claimed limitations and, thus, the Examiner has used the wrong test. Therefore, the Section 112, first paragraph rejection has neither been made in view of proper (claimed) limitations nor does the rejection rely upon the proper test, and Appellant requests that the rejection be reversed.

ISSUE 4: The Section 112, first paragraph rejection is improper because the Specification clearly describes example embodiments for the claimed elements of the present invention in such a manner that enables one skilled in the art to make and use the invention.

Claims 1-16 stand rejected under Section 112, first paragraph, as containing subject matter that was not adequately described in the Specification. However, Appellant submits that the Specification and claims are clearly sufficient to enable one skilled in the art to make and use the invention. For example, the following paragraph, taken from the Specification beginning at line 15 of page 11, describes various other example portions of the die from which reflections may be obtained and how differences in the reflections are used to detect defects:

> In particular example embodiments, the reflecting surface is the transition in substances from one material to another material (such as from an epitaxial silicon region to an oxide), the reflecting surface is a defect in one material type (such as within a well region), and the reflecting surface is transition from one concentration of doped silicon to another concentration of doped silicon (such as from a p+ epitaxial silicon to an active or well region). In various testing applications of a flip-chip die, reflecting surfaces of these example types are tested to detect defects including but not limited to: contaminants such as potassium deposits, fractures in the silicon, various crystal defects, particulates and dopants. For such defects, the optical path difference profiled in connection with development of the reference can be readily distinguished from the optical

path difference profiled in connection with die under evaluation, for example, by examining shifts in intensity.

As discussed previously, one example approach for defect detection involves detecting an optical signal having a time/wavelength differential that is different from the time/wavelength differential from a surface in the reference die. This approach may involve creating an interference profile as described in the specification and the cited references therein. However, simply stated, defect detection can be achieved by comparing the time/wavelength differential of light reflected from a defective die with a reference (*e.g.*, light reflected from a non-defective die). This approach is discussed, for example, in connection with FIG. 2 and on page 10, line 12 through page 11, line 14. In this regard, the Examiner's remarks directed to the requirement of an interference profile in the claim limitations are contrary to the plain language of the specification. Specifically, FIG. 2 and the above-referenced discussion clearly explain an example application of differential detection with light entering the back side of the device using a "surface 231 under evaluation within the die" (see page 10, lines 17-18 of the specification). The surface 231 in FIG. 2 is in the die, with light entering the die and reflecting off of the surface and the reflected light being analyzed, such as via a comparison. For instance, page 8, lines 15-16 discuss an analysis including "comparing the beams of light with a reference." In addition, page 10, lines 20-24 discusses receiving "two corresponding beams of light reflected from the reference die" and "determining the time-arrival differential and/or the intensity difference for the two beams." Such comparisons certainly do not require that the beams be combined.

In view of the portions of the Specification cited in the preceding paragraph and in specific regard to claim 1, certain claim limitations are directed to "comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die." Clearly, when there is a difference in response (*e.g.*, due to a difference in optical path length) between that of a reference die and that of a die being analyzed, the difference is distinguishable as a difference in the composition in the respective dies. This difference in composition may, as discussed, include different doping profiles and dopants, which may be interpreted, for example, as a defect in the die being analyzed.

Furthermore, in response to the Examiner's assertion that the "Applicant never claims or discloses how the defects are detected" and that "only a general statement of dual-differential detection is made," Appellant again points to the cited portions of the specification as discussed

above for a specific statement regarding example implementations for detecting defects. In addition, these approaches are only examples of types of approaches to which the claimed limitations are directed; other such approaches are discussed in the Specification, as indicated above.

In view of the above, Appellant submits that the Section 112, first paragraph rejection is improper and must be reversed.

ISSUE 5: The Section 112, second paragraph rejection should be reversed because the Examiner based the rejection upon an improper assertion and because the claimed limitations are definite as consistent with the requirements of Section 112(2).

The Section 112(2) rejection should be reversed because the Examiner based the rejection on an incorrect assertion regarding the nature of the claim limitations and because the language of the claim limitations is consistent with the requirements of Section 112(2). Applicant submits that Section 112 does not require the claims clearly disclose details of a specific embodiment that the Examiner would like to see claimed. In this instance, the Examiner appears to be incorrectly asserting that light never reaches a defective surface and that a step of illuminating the defects is missing. On the contrary, the claimed limitations include light directed "into the back side of the semiconductor die," with a defect at a surface in the die being detected using a beam reflected therefrom (*see* claim 1 and surface 231 in FIG. 2). These limitations are directed to a variety of approaches for such direction of light, and limiting the claims as the Examiner purports would redefine Appellant's invention. Therefore, the assertion that light never reaches a defective surface is incorrect. In specific regard to claims 10-16, Appellant submits that the Examiner has incorrectly asserted that the claims do not include "means, structure, or element" that "illuminates or receives light reflected by the defects." For instance, in claim 10, the claimed "laser means" directs light into the back side of the die, and the "means for analyzing" can receive and analyze the reflected light. Therefore, the assertion that these elements are missing is incorrect.

Furthermore, as indicated by MPEP §2173.02, the definiteness of claim language must be analyzed, not in a vacuum, but in light of the content of the particular application disclosure. In this regard, when analyzed in the context of the examples in the Specification, including those discussed in connection with Issues 3 and 4 above, the claim language clearly meets the

definiteness requirement of Section 112. Specifically, one of skill in the art would understand that the various portions of the Specification directed to the detection of light reflected from a surface for defect detection would obviously require that light must reach the defect. Approaches to such light detection may involve those asserted by the examiner, but are not limited as such. For instance, page 11, lines 4-14 of the Specification discuss "a die having a possible defect at this surface level [in the die] can then be evaluated ... by the defective surface generating an optical path time/wavelength differential that is different from the optical path time/wavelength differential ... from the reference die." Furthermore, as discussed on lines 15-23 of page 11 of the Specification in connection with one implementation, "the reflecting surface is a defect in one material type." These and other example embodiments discussed in the Specification are directed to light being directed into the back side of the die with a reflection thereof from a defect being analyzed. Appellant submits that the Examiner's assertion that these elements are missing in the claims is improper and contrary to the M.P.E.P.; therefore, Appellant submits that the Section 112(2) rejection must be reversed.

ISSUE 6: The Section 112, second paragraph rejection must be reversed because the Examiner failed to fully and clearly state the rejection in a manner that allows the Appellant to judge the propriety thereof.

The Section 112, second paragraph rejection must be reversed because the Examiner failed to state the rejection in a manner as required for informing the Appellant as to the nature of the rejection. Specifically, the Examiner cited a portion of the M.P.E.P. (§2173.05(l)) that appears not to exist. A search of the Eighth edition of the M.P.E.P., as available at the USPTO's web site, does not show §2173.05(l). As indicated in M.P.E.P. §707.07(d), the ground of rejection of a claim must be "fully and clearly stated." In this instance, the grounds for rejection are unclear because the Examiner has not properly cited support for making the rejection. Consistent with 35 U.S.C. §132, Appellant submits that the Section 112, second paragraph rejection cannot be maintained because the grounds behind the rejection are unclear, and requests that the rejection be reversed.

ISSUE 7: The finality of the Section 112, first paragraph rejection is improper because the Examiner failed to answer the substance of the Appellant's traversal as required by M.P.E.P.§707.07(f).

The Examiner failed to take note of the Appellant's traversals of the Section 112 and Section 103(a) rejections and answer the substance thereof, as presented in the Office Action Responses of record, including the response filed on March 5, 2002. M.P.E.P. §707.07(f) states, in pertinent part, the following:

> Where the requirements are traversed, or suspension thereof requested, the examiner should take proper reference thereto in his or her action on the amendment. Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. If a rejection of record is to be applied to a new or amended claim, specific identification of that ground of rejection, as by citation of the paragraph in the former Office letter in which the rejection was originally stated, should be given.

In this regard, M.P.E.P. §707.07(f), as consistent with 35 U.S.C. §132, indicates that the Examiner should take note of the Appellant's arguments regarding the impropriety of the Section 112 and Section 103(a) rejections and answer the substance of them. This is consistent with the purpose of aiding the Appellant in judging the propriety of continuing the prosecution, as indicated in 37 C.F.R. §1.104(a)(2).

In specific regard to the Section 112 rejections, Appellant has repeatedly pointed the Examiner to portions of the Specification describing example implementations of the various claimed limitations in a manner consistent with the Section 112(1) and Section 112(2) requirements. However, the Examiner has apparently ignored and/or chosen not to address these cited portions of the specification in maintaining the Section 112 rejections. For instance, page 7 of the Final Office Action asks "[I]f light never reaches the surface of the device which includes the defects then how can the defects be measured?" However, as discussed above and in previous communications, light is directed into the back side of a die (*e.g.*, as limitations in claim 1 are directed) and reflected light from a defect in the back side is detected. Support for these limitations is ample in the Specification, as discussed in connection with Issues 3-6 above. Therefore, it is unclear as to how the Examiner is interpreting the Specification and claims in order to arrive at the Section 112 rejections.

In specific regard to the Section 103(a) rejection, the Examiner has failed to address Appellant's argument regarding the lack of motivation to make the asserted modification of the

'838 reference, or to show correspondence between the cited reference(s) and the claimed limitations. The Examiner failed address or even mention any motivation and/or answer the Appellant's traversals regarding the lack thereof.

In view of the above, the Examiner failed to answer Appellant's traversals as required and, as a result, the Appellant was not afforded the opportunity to judge the propriety of the Section 112 and Section 103(a) rejections and to form a response thereto. Therefore, Appellant requests that the finality of the Office Action mailed on August 27, 2002 be removed, that the Examiner take reference to the traversals and that the Appellant have an opportunity to respond thereto, should the rejections be maintained.

IX. Conclusion

Appellant respectfully requests reversal of the rejection as applied to the appealed claims and allowance of the application.

Respectfully submitted,

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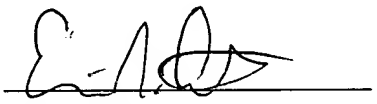

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APPENDIX OF APPEALED CLAIMS

1. For a semiconductor device that includes a semiconductor die having a circuit side and bulk silicon in an back side opposite the circuit side, a method for detecting a defect at a surface in the die, comprising:

locating a first beam splitter for optical manipulation relative to the back side of the semiconductor die;

directing light of a known wavelength at the beam splitter, wherein the first beam splitter is adapted to direct a first beam of light into the back side of the semiconductor die which reflects a second beam of light back;

redirecting the second beam to a second beam splitter, the second beam splitter generating third and fourth beams of light; and

analyzing the third and fourth beams of light, including comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die.

2. A method, according to claim 1, further including using the first and second beam splitters to generate different third and fourth beams from a nondefective semiconductor and analyzing the different third and fourth beams of light to develop the reference.

3. A method, according to claim 2, wherein the back side of the semiconductor die reflects the second beam of light back to the first beam splitter, and wherein the relational factor is a function of a time differential, or intensity, between the third and fourth beams of light.

4. A method, according to claim 3, further including thinning the back side of the die before the steps of claim 1.

5. A method, according to claim 4, wherein thinning the back side of the die includes locally thinning a portion of the back side of the die.

6. A method, according to claim 4, wherein thinning the back side of the die includes locally thinning a portion of the back side of the die to a thickness of less than about 20 microns.

7. A method, according to claim 1, wherein the light of a known wavelength is near infra-red light.

8. A method, according to claim 1, wherein the relational factor is a function of a time differential, or intensity, between the third and fourth beams of light.

9. A method, according to claim 1, wherein the back side of the die into which the beam of light is directed has a thickness of at least about 20 microns.

10. A system for detecting a defect in a semiconductor device that includes a semiconductor die having a circuit side and bulk silicon in an back side opposite the circuit side, comprising:

first beam splitter means for beam splitting and adapted for optical manipulation relative to the back side of the semiconductor die;

laser means for directing light of a known wavelength at the first beam splitter means, wherein the first beam splitter means is adapted to direct a first beam of light into the back side of the semiconductor die which reflects a second beam of light;

second beam splitter means for generating third and fourth beams of light in response to the second beam being a redirected; and

means for analyzing the third and fourth beams of light, including means for comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die.

11. A system for detecting a defect in a semiconductor device that includes a semiconductor die having a circuit side and bulk silicon in a back side opposite the circuit side, comprising:

a first beam splitter adapted for optical manipulation relative to the back side of the semiconductor die;

a laser for directing light of a known wavelength at the first beam splitter, wherein the first beam splitter is adapted to direct a first beam of light into the back side of the semiconductor die which reflects a second beam of light back;

a second beam splitter for generating third and fourth beams of light in response to the second beam being a redirected; and

a processor adapted for analyzing the third and fourth beams of light, including comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die.

12. A system, according to claim 11, wherein the back side of the semiconductor die reflects the second beam of light back to the first beam splitter.

13. A system, according to claim 11, wherein the laser is a YAG laser.

14. A system, according to claim 11, further including means for thinning the back side of the die.

15. A system, according to claim 11, wherein the laser is a YAG laser, and further including means for thinning the back side of the die.

16. A system, according to claim 11, wherein the relational factor is a function of a time differential, or intensity, between the third and fourth beams of light.